REMARKS

In view of the above amendments and the following remarks, reconsideration and further examination are respectfully requested.

I. Amendments to the Claims

Independent claims 1, 9 and 17-21 have been amended to clarify features of the invention recited therein and to further distinguish the present invention from the references relied upon in the rejections discussed below.

Support for these amendments can be found, at least, in Figs. 4 and 8.

II. 35 U.S.C. § 103 Rejections

Claims 1, 6, 8, 9, 13 and 15-21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Puri (Signal Processing Image Communication 2). Further, claims 4, 5, 7, 12 and 14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Puri in view of Hosono (U.S. 5,796,438). These rejections are believed clearly inapplicable to amended independent claims 1, 9 and 17-21 and the claims that depend therefrom for the following reasons.

Amended independent claim 1 recites a decoding device including a decoding unit, a motion vector detection unit operable to detect a second motion vector, which is a motion vector between image frames of an encoded image signal decoded, based on (i) decoded additional information output from the decoding unit and (ii) decoded image frames output from the decoding unit, and includes an interpolation frame creation unit operable to create an interpolation frame, considering the detected second motion vector as the first motion vector.

Further, claim 1 recites that the interpolation frame creation unit obtains an <u>interpolation motion vector from the second motion vector based on a ratio</u> between (i) a distance in a time axis direction between the decoded image frames and (ii) a distance in a time axis direction from a position of one of the decoded image frames to an interpolation position of the interpolation frame for interpolating the image frames. Further, claim 1 recites that, when the additional information includes (i) an <u>interpolation method</u> for the interpolation frame with respect to the image frames, (ii) a <u>motion detection method</u> for detecting the first motion vector, and (iii) profile information specifying a combination of information, the <u>interpolation frame creation unit creates the interpolation frame based on information included in the additional information</u>, and wherein, when the additional information further includes at least one of (i) <u>residual information</u> of the interpolation frame and an image frame corresponding to the interpolation frame, and (ii) a <u>vector difference</u> between a motion vector of the interpolation frame detected with respect to the image frames and a motion vector of the interpolation frame derived based on the first motion vector with respect to the image frames, the <u>interpolation frame creation unit creates the interpolation frame based on information included in the additional information</u>.

Puri and Hosono, or any combination thereof, fails to disclose or suggest the above-mentioned distinguishing features, required by amended independent claim 1.

Rather, Puri merely teaches the use of residual information (<u>see</u> page 131, right col., lines 1-3; and Figs. 2 and 3).

Thus, in view of the above, it is clear that Puri is merely related to the use of residual information, but fails to disclose or suggest the use of additional information including profile information for specifying whether information of (1) an interpolation method for the

interpolation frame, (2) a motion detection method, (3) residual information and/or (4) a vector difference is included, as required by claim 1.

In other words, even though Puri could be interpreted to teach determining whether or not residual information is included, Puri still fails to disclose or suggest using profile information for specifying a combination of information included in the additional information, such that the profile information indicates which information of (1) the interpolation method for the interpolation frame, (2) the motion detection method, (3) the residual information, and/or (4) the vector difference is included, as required by claim 1.

Furthermore, despite the disclosure of the residual information, Puri still fails to disclose or suggest obtaining an interpolation motion vector from the second motion vector based on a ratio between (i) a distance in a time axis direction between the decoded image frames and (ii) a distance in a time axis direction from a position of one of the decoded image frames to an interpolation position of the interpolation frame for interpolating the image frames, as recited in claim 1.

Therefore, because of the above-mentioned distinctions it is believed clear that claim 1 and claims 4-8 that depend therefrom would not have been obvious or result from any combination of Puri and Hosono.

Therefore, there is no disclosure or suggestion in Puri and/or Hosono or elsewhere in the prior art of record which would have caused a person of ordinary skill in the art to modify Puri and/or Hosono to obtain the invention of independent claim 1. Accordingly, it is respectfully submitted that independent claim 1 and claims 4-8 that depend therefrom are clearly allowable over the prior art of record.

Amended independent claims 9, 17, 18, 19, 20 and 21 are directed to a device, a system, a circuit, a circuit, a program and a program, respectively and each recites features that correspond to the above-mentioned distinguishing features of independent claim 1. Thus, for the same reasons discussed above, it is respectfully submitted that independent claims 9 and 17-21 and claims 12-16 that dependent therefrom are allowable over the prior art of record.

Additionally, the Applicants note that independent claims 9, 19 and 21 recite that, when a value of a subtraction signal exceeds a predetermined threshold, the vector difference is provided. However, it is submitted that no portion of Puri teaches that when the value of the subtraction signal exceeds the predetermined threshold, the vector difference is provided, as required by claims 9, 19 and 21.

Furthermore, the Applicants note that in view of the above-described structure required by independents claims 1, 9 and/or 17-21, (1) when a size of a "subtraction signal" is smaller than a predetermined threshold, the present invention encodes additional information (or decodes encoded additional information) including (A) an interpolation method for the interpolation frame with respect to the image frames, and (B) a motion detection method for detecting the first motion vector, and (2) when the size of the "subtraction signal" is greater or equal to the predetermined threshold, the present invention encodes an additional information (or decodes encoded additional information) including (A) the interpolation method for the interpolation frame with respect to the image frames, (B) the motion detection method for detecting the first motion vector, (C) residual information of the interpolation frame and an image frame corresponding to the interpolation frame, and (D) vector difference between a motion vector of the interpolation frame detected with respect to the image frames and a motion vector of the interpolation frame derived based on the first motion vector with respect to the image frames.

In view of the above, the Applicants respectfully submit that, the ability for the additional information to include the residual information, as described by Puri, cannot provide the result of the structure required by claims 1, 9 and/or 17-21, such that (1) when a size of a "subtraction signal" is smaller than a predetermined threshold, the present invention encodes an additional information (or decodes encoded additional information) including (A) an interpolation method for the interpolation frame with respect to the image frames, and (B) a motion detection method for detecting the first motion vector, and (2) when the size of the "subtraction signal" is larger or equal to the predetermined threshold, the present invention encodes an additional information (or decodes encoded additional information) including (A) the interpolation method for the interpolation frame with respect to the image frames, (B) the motion detection method for detecting the first motion vector, (C) residual information of the interpolation frame and an image frame corresponding to the interpolation frame, and (D) vector difference between a motion vector of the interpolation frame detected with respect to the image frames and a motion vector of the interpolation frame derived based on the first motion vector with respect to the image frames.

III.   Conclusion

In view of the above amendments and remarks, it is submitted that the present application

is now in condition for allowance and an early notification thereof is earnestly requested. The

Examiner is invited to contact the undersigned by telephone to resolve any remaining issues.

Respectfully submitted,

Hisao SASAI et al.

/Andrew L. Dunlap/
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By _____

Andrew L. Dunlap
Registration No. 60,554
Attorney for Applicants

ALD/lkd
Washington, D.C. 20005-1503
Telephone (202) 721-8200
Facsimile (202) 721-8250
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